5. 物質・生命化学系　Materials Science and Biotechnology Field			**MSB-S3**
授業科目名 Course Title	分子細胞生物学 Molecular and Cellular Biology	単位数 Credit	**2**
担当教員 Instructor	沖　昌也　OKI Masaya 小西　慶幸　KONISHI Yoshiyuki	開講学期 Semester	春学期 Spring
キーワード Keywords	DNA, RNA, Protein, DNA Replication, DNA Repair, DNA Recombination, Transcription, Protein Synthesis, Recombinant DNA, Protein Trafficking, Cytoskeleton, Cell Cycle, Apoptosis	曜日/時限 Day & Time	

授業概要　Course summary
分子細胞生物学を学ぶコースです。内容は、タンパク質、核酸、遺伝情報、タンパク質の合成です。 This course provides a Molecular and Cellular Biology. Topics include proteins, nucleic acids, genetic information, and synthesis of proteins. The latter half of the course focuses on the molecular mechanisms regulating cellular functions.
到達目標　Course goal
To understand Molecular and Cellular Biology
授業内容　Course description
We lecture about Molecular and Cellular Biology using a textbook and slides. We carry out a small test every time to check the level of understanding. 1. Examination of Biological knowledge 2. Nucleic Acids 3. DNA Replication 4. DNA Repair 5. DNA Recombination 6. Transcription and RNA Processing 7. Protein Synthesis 8. Recombinant DNA Technology 9. Protein Trafficking 10. Cytoskeleton 11. Motor Proteins 12. Cell Cycle 13. Tumorigenesis 14. Apoptosis 15. Nerve and Muscle Cells 16. Final Examination
準備学習（予習・復習）等　Preparation / Review
Give a subject about contents of a lecture.
授業形式　Class style
講義と演習 Lectures and laboratories

成績評価の方法・基準　Method of evaluation
毎回の小テスト、期末試験、演習レポート、および期末レポート Small test of every time, Final examination, laboratory reports and final report
教科書・参考書等　Textbook and material
Principles of Biochemistry (HORTON), Molecular Cell Biology (WH FREEMAN)
受講要件・予備知識　Prerequisite
生物学の知識 Biological knowledge
その他の注意事項　Note
生物学の基礎を理解している人を対象とした発展的講義となるため、大学で生物学の講義を受講した人のみ受講可。授業形式：対面またはオンデマンド Only the person who took a biological lecture at the University can take this lecture.　Style: face-to-face or on demand